Kennedy/Jenks Consultants

Engineers & Scientists

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13 May 2015

Joe Wallace
U.S. Environmental Protection Agency
1200 Sixth Avenue (ECL-111)
Seattle, WA 98101

Subject: 2014 Annual Progress Report
K/J 006014.01 and 966124.34

Dear Mr. Wallace:

Enclosed is the 2014 Annual Progress Report for the South Tacoma Field site. Inspection and sampling activities were conducted in December 2014 to evaluate current conditions at the site. For reference, we have attached three figures from the Operation and Maintenance (O&M) Plan for the site to help orient you on the location of annual O&M activities addressed in this report. **We request consideration in deleting the Amsted portion of the site from the National Priorities List since contaminants have not been detected in groundwater above cleanup levels over the past nine years.**

Please call us if you have questions regarding the information contained herein.

Very truly yours,

KENNEDY/JENKS CONSULTANTS

Nathan A. Graves

Nathan Graves
Vice President

Enclosures

cc: Ed Brosius, Amsted Industries
Scott MacDonald, BNSF
Dava Kaitala, BNSF
Doug Rhine, R.W. Rhine

Progress Report

SITE NAME:	South Tacoma Field, Tacoma, Washington
PREPARED BY:	Kennedy/Jenks Consultants
REPRESENTING:	Amsted Industries and BNSF Railway Company
DATE:	Reporting Year 2014

REPORTING PERIOD:

a. **Progress made this reporting period, including problems encountered and recommendations:**

Kennedy/Jenks Consultants (Kennedy/Jenks) completed one groundwater monitoring event in December 2014 for The BNSF Railway Company (BNSF) and former Amsted Industries site wells. Analytical results are summarized on Table 1, which is provided in Attachment A. There was a decrease in lead concentrations compared to previous sampling events for the South Tacoma Field (STF) site-wide wells during the reporting period. Two sample results for site-wide wells showed contaminant concentrations above the 15 micrograms (µg) "action level" for drinking water. Lead was detected in groundwater at well STM-4A at 40 micrograms per liter (µg/L), and at well STM-3A at 17 µg/L. At the Amsted site, lead was not detected and all sampled contaminants have been below site cleanup levels for **nine consecutive years**. BNSF well STM-1A is damaged and a groundwater sample could not be collected. BNSF intends to close this well in the near future. Proposed closure details will be provided to EPA with the request to replace monitoring well NMW-8A at Pioneer (see below).

Groundwater elevations during the most recent sampling event in December 2014 were higher than in January 2014 but lower than in the several years prior. In years with higher groundwater elevations, chemical concentrations have been higher, potentially due to contaminated soil in the vadose zone being exposed to continuous saturation that had not occurred in the recent past. Groundwater results will continue to be monitored following future sampling events to assess continuing trends.

Kennedy/Jenks completed one groundwater monitoring event in December 2014 at Pioneer Builders Supply. Analytical results are summarized on Table 2, which is provided in Attachment A. Chemicals of concern were detected at generally lower concentrations compared to the last few years; however, trace concentrations of diesel and oil range hydrocarbons were detected in groundwater at NMW-9A, which has not had detectable concentrations in recent years. No chemicals were detected above cleanup levels listed in Table 2 for any of the monitoring wells.

Completed one site inspection (December 2014) in accordance with Operations & Maintenance (O&M) Plan requirements. The inspection report is provided in Attachment B.

One of the Pioneer wells (NMW-8A) is damaged (suspected as the result of construction by Sound Transit). The well requires replacement, which has been authorized by BNSF and was to be performed during 2014. We are working with Sound Transit to determine ownership and right of way restrictions in the area and intend to replace the damaged well with a new well in the same general area. We intend to provide U.S. Environmental Protection Agency (EPA) with the proposed location and brief plan on replacing the well in 2015 once ownership and right of way issues are resolved. We were able to sample this well during the most recent monitoring event since groundwater elevations were still high enough to sample using a peristaltic pump. A summary memo describing well repair/replacement will be presented in the next annual report.

b. **Anticipated problem areas and recommended solutions, including technical and scheduling information:**

Well security and fencing conditions will be monitored during annual inspections. Ponding in maintenance grids will be monitored during annual inspections to assess cap erosion. Public access to non-fenced areas has been limited by new fencing. Caps are intact, limiting exposure.

c. **Problems resolved including results obtained relating to previously identified problem areas.**

None

d. **Deliverables submitted, including dates of completion, deliverable anticipated to be submitted with next report, and reasons due dates for any future deliverables may need to be revised. Delays should be fully explained:**

2013 annual report submitted 2 May 2014. Awaiting response to our 2 December 2003 request to EPA for reduced monitoring/inspection requirements. Also, awaiting response to our 31 October 2003 proposed work plan for additional investigations at Pioneer Builders Supply.

e. **Upcoming event/activities planned, including field surveys, meetings, etc., and all major tasks to be performed within the next reporting period:**

- Conduct annual inspection.
- Replace NMW-8A in vicinity of Pioneer and close STM-1A
- Perform groundwater monitoring, potentially reduced if agreed by EPA based on future discussions.
- Implement additional investigations at Pioneer Builders Supply once EPA approves proposed work plan.
- Relocate or replace Pioneer well NMW-8A and possibly relocate NMW-11A; close site-wide well STM-1A (damaged).
- Replace missing grid markers.
- Replace signs at former Amsted property, if necessary.

f. Key staffing changes, including consultant, contractor, or subcontractor personnel:

None.

g. Reports, including identification of daily reports, inspection reports, laboratory/monitoring data, etc., that are available for review if requested by EPA:

- Groundwater Monitoring Summary Tables are provided in Attachment A. Original data reports available at Kennedy/Jenks Consultants' office.
- Annual inspection report is provided in Attachment B.

Figures

LEGEND

- GRID NOT SAMPLED DURING RI OR RA
- GRID ABOVE CAPPING LEVELS; COVERED WITH AT LEAST 1 FOOT OF SOIL OR CAPPED WITH ASPHALT; MAINTENANCE REQUIRED
- GRID POTENTIALLY ABOVE CAPPING LEVELS; NOT REMEDIATED; SAFETY PRECAUTIONS REQUIRED

DISCLAIMER

NO WARRANTY IS ASSOCIATED WITH THE ACCURACY OF CHEMICAL DATA DEPICTED ON THIS MAP. CHEMICAL CONCENTRATIONS COULD BE HIGHER OR LOWER THAN SHOWN. PEOPLE WHO HANDLE SOIL AT THE SITE (I.E., CONTRACTORS) SHOULD TAKE CONSERVATIVE PRECAUTIONS TO PROTECT AGAINST EXPOSURE. CONTACT AN ENVIRONMENTAL PROFESSIONAL FOR ASSISTANCE.

- DRAINAGE CHANNEL
- RAILROAD TRACKS
- FENCE
- BURIED GEOTEXTILE; IDENTIFIES LIMIT OF TREATED OR CONTAMINATED SUBSURFACE SOIL

CAPPING LEVELS

ARSENIC	200 mg/kg
LEAD	1,000 mg/kg
cPAHs (TOTAL)	20 mg/kg
PCBs (TOTAL)	10 mg/kg

NOTE:

1) NO SAMPLING/REMEDIATION CONDUCTED WITHIN STRUCTURES, BURLINGTON WAY RIGHT OF WAY, OR PAVED AREAS; EXCEPT AS NOTED.

N

0 250 500

APPROXIMATE SCALE IN FEET

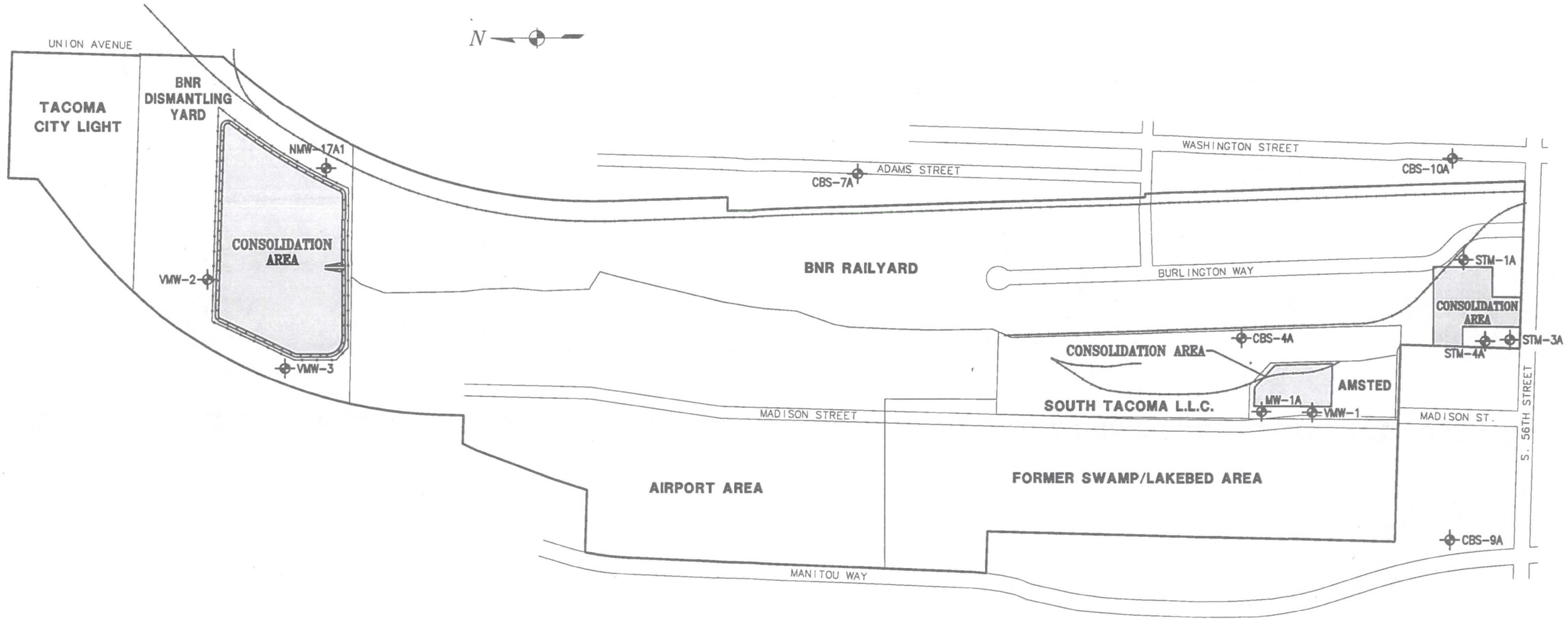
Kennedy/Jenks Consultants

SOUTH TACOMA FIELD
TACOMA, WA

MAINTENANCE GRIDS

006015.00/P9SK004A

FIGURE 2-1



LEGEND

NMW-1A ⊕ EXISTING MONITORING WELL LOCATION

0 250 500

APPROXIMATE SCALE IN FEET

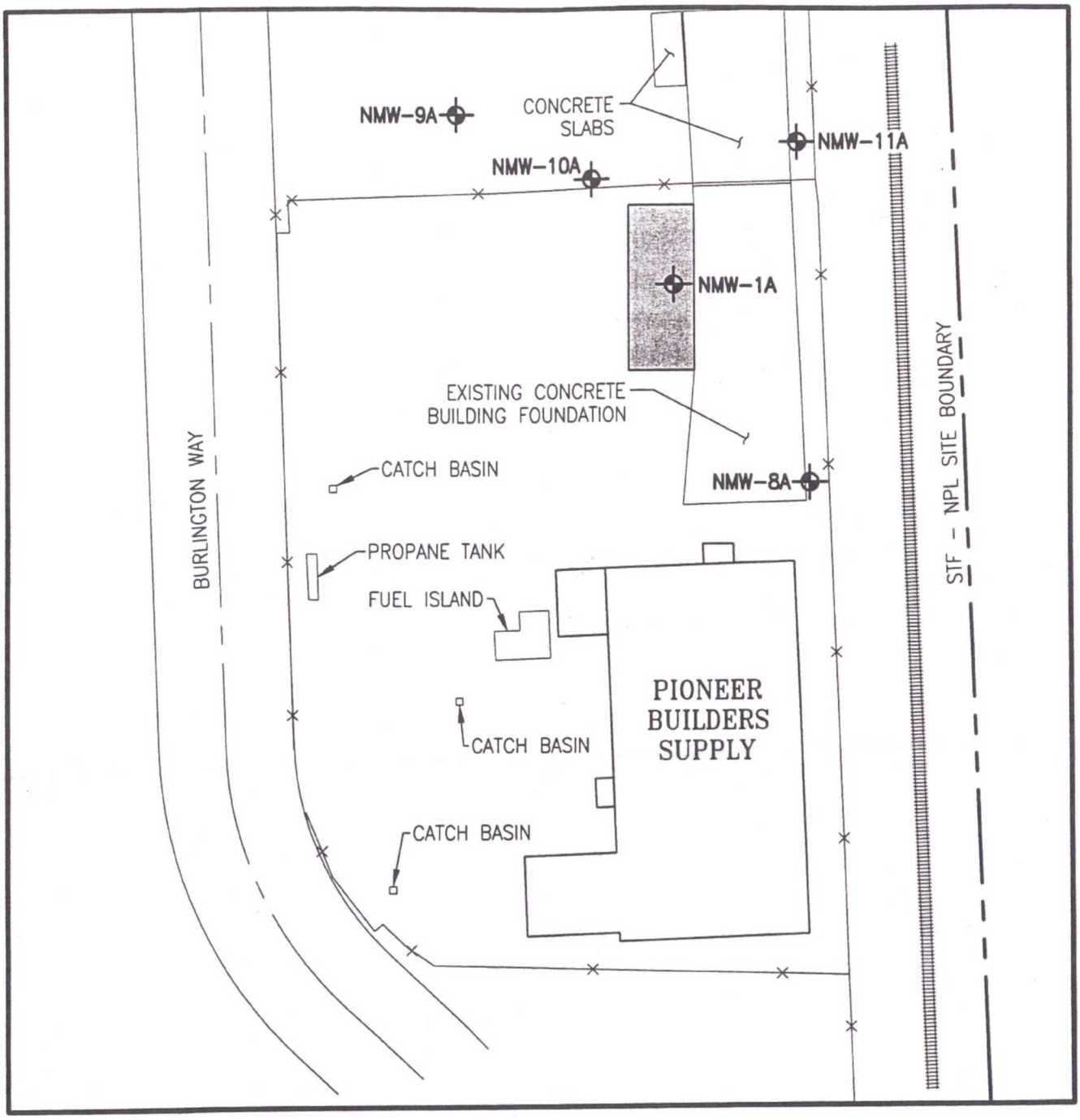
Kennedy/Jenks Consultants

SOUTH TACOMA FIELD
TACOMA, WA

MONITORING WELL LOCATIONS

966124.53/P9SK003

FIGURE 3-1



LEGEND

- NMW-1A — MONITORING WELL
- EXISTING RAILROAD TRACKS
- EXISTING FENCE
- UNDERGROUND TANK EXCAVATION

N

0 40 80

APPROXIMATE SCALE IN FEET

NOTE:

1) ALL LOCATIONS ARE APPROXIMATE.

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SOUTH TACOMA FIELD
TACOMA, WA

PIONEER BUILDERS SUPPLY
MONITORING WELL LOCATIONS

966124.53/P9SK002

FIGURE 3-2

Attachment A

Groundwater Monitoring Summary Tables

TABLE 1

GROUNDWATER ANALYTICAL RESULTS
POST REMEDIATION SAMPLING EVENT – DECEMBER 2014
South Tacoma Field Site

Analyte	Amsted Wells			STF Wells			MCLs[b]
	MW-1A	CBS-4A	VMW-1	STM-1A	STM-3A	STM-4A / STM-100[a]	
Polynuclear Aromatic Hydrocarbons (µg/L)[c]	ND[d]	ND[d]	ND[d]	NA[e]	NA	NA	–[f]
Total lead (µg/L)[g]	<2.0[h]	<2.0[h]	<2.0[h]	NA	**17**	**40/38**	15[i]
Total Petroleum Hydrocarbons as diesel (mg/L)[j]	<0.100	<0.100	<0.100	NA	NA	NA	–
Total Petroleum Hydrocarbons as oil (mg/L)[j]	<0.250	<0.250	<0.250	NA	NA	NA	–

Analyte	STF Wells					
	CBS-7A	CBS-10A	VMW-2	VMW-3	NMW-17A	MCLs[b]
Polynuclear Aromatic Hydrocarbons (µg/L)[c]	NA	NA	NA	NA	NA	–
Total lead (µg/L)[g]	<2.0[h]	<2.0[h]	<2.0[h]	<2.0[h]	<2.0[h]	15[i]
Total Petroleum Hydrocarbons as diesel (mg/L)[j]	NA	NA	NA	NA	NA	–
Total Petroleum Hydrocarbons as oil (mg/L)[j]	NA	NA	NA	NA	NA	–

Notes:

(a) Sample STM-100 is a duplicate sample collected from monitoring well STM-4A.
(b) Maximum contaminant levels (MCLs) are provided in the Drinking Water Regulations under the Safe Drinking Act, as amended.
(c) Samples were analyzed for polynuclear aromatic hydrocarbons (PAHs) using EPA Method 8270c with select ion monitoring (SIM).
(d) "ND" = No PAH analytes were detected at concentrations above the laboratory reporting limits (0.25 µg/l for naphthalenes; 0.050 µg/l for all other PAH analytes).
(e) "NA" = Not analyzed.
(f) "–" Denotes that a MCL is not available.
(g) Groundwater samples were analyzed for total lead using EPA Method 6020.
(h) "<" denotes that the analyte was not detected at the indicated laboratory reporting limit.
(i) No MCL is currently available; the value represents an action level.
(j) Groundwater samples were analyzed for total petroleum hydrocarbons as diesel (including oil) using NWTPH-Dx.

mg/l = milligrams per liter
µg/L = micrograms per liter

Concentrations above the laboratory reporting limits are shown in bold

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
ANNUAL SAMPLING EVENT – DECEMBER 2014
Pioneer Builders Supply

Chemical	NMW-1A/ NMW-100[a]	NMW-8A	NMW-9A	NMW-10A	NMW-11A	MCLs[b]	Cleanup Levels[c]
Volatile Organic Compounds (VOCs) (µg/L)[d]							
Benzene	<1.0[e]/ <1.0	<1.0	<1.0	<1.0	<1.0	5.0	5.0
Toluene	<5.0 / <5.0	<5.0	<5.0	<5.0	<5.0	1,000	1,000
Ethylbenzene	<1.0 / <1.0	<1.0	<1.0	**8.6**	<1.0	700	700
Total Xylenes	<3.0 / <3.0	<3.0	<3.0	**15**	<3.0	10,000	10,000
n-Butylbenzene	<1.0 / <1.0	<1.0	<1.0	<1.0	<1.0	–[f]	–
sec-Butylbenzene	<1.0 / <1.0	<1.0	<1.0	**1.5**	<1.0	–	–
tert-Butylbenzene	<1.0 / <1.0	<1.0	<1.0	<1.0	<1.0	–	–
p-Isopropyltoluene	<1.0 / <1.0	<1.0	<1.0	**1.5**	<1.0	–	–
1,2-Dichlorobenzene	<1.0 / <1.0	<1.0	<1.0	<1.0	<1.0	600	720
1,3-Dichlorobenzene	<1.0 / <1.0	<1.0	<1.0	<1.0	<1.0	–	–
1,4-Dichlorobenzene	<1.0 / <1.0	<1.0	<1.0	<1.0	<1.0	75	1.82
1,3,5-Trimethylbenzene	<1.0 / <1.0	<1.0	<1.0	**2.0**	<1.0	–	400
1,2,4-Trimethylbenzene	<1.0 / <1.0	<1.0	<1.0	**16**	<1.0	–	400
1,2,3-Trimethylbenzene	<1.0 / <1.0	<1.0	<1.0	**1.2**	<1.0	–	–
Isopropylbenzene	<1.0 / <1.0	<1.0	<1.0	**7.0**	<1.0	–	–
n-Propylbenzene	<1.0 / <1.0	<1.0	<1.0	**2.0**	<1.0	–	–
1,2,4-Trichlorobenzene	<1.0 / <1.0	<1.0	<1.0	<1.0	<1.0	70	80
1,2,3-Trichlorobenzene	<1.0 / <1.0	<1.0	<1.0	<1.0	<1.0	–	–
Naphthalene	<5.0 / <5.0	<5.0	<5.0	<5.0	<5.0	–	160
1,2-Dichloroethane	<1.0 / <1.0	<1.0	<1.0	<1.0	<1.0	5	0.481
Chloroform	<5.0 / <5.0	<5.0	<5.0	<5.0	<5.0	80	80
Chlorobenzene	<1.0 / <1.0	<1.0	<1.0	<1.0	<1.0	100	160
Carbon tetrachloride	<1.0 / <1.0	<1.0	<1.0	<1.0	<1.0	5	0.34

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
ANNUAL SAMPLING EVENT – DECEMBER 2014
Pioneer Builders Supply

Chemical	NMW-1A/ NMW-100[a]	NMW-8A	NMW-9A	NMW-10A	NMW-11A	MCLs[b]	Cleanup Levels[c]
Total Petroleum Hydrocarbons (mg/L)[g]							
Gasoline range hydrocarbons	<0.100/<0.100	<0.100	<0.100	**0.410**	<0.100	–	0.8 (with presence of benzene)/1 w/o
Diesel range hydrocarbons	**0.120 /0.110**	<0.100	**0.130**	**0.340**	<0.100	–	0.5
Oil range hydrocarbons	<0.250/<0.250	<0.250	**0.360**	<0.250	<0.250	–	0.5

Notes:

(a) Sample NMW-100 is a duplicate sample collected from well NMW-1A.
(b) Maximum contaminant levels (MCLs) provided in the Drinking Water Regulations under the Safe Drinking Act, as amended.
(c) Cleanup levels from Table 9-4 of the Record of Decision or the Model Toxics Control Act (MTCA) Method A/B groundwater cleanup levels based on MTCA Cleanup Levels and Risk Calculations (CLARC 3.1) updated November 2007.
(d) Groundwater samples were analyzed for VOCs by EPA Method 8260B. Only the results of historically detected analytes are summarized in this table.
(e) "<" Denotes that the analyte was not detected at the indicated laboratory reporting limit.
(f) "--" Denotes that a cleanup level has not been specified in the ROD, a MTCA Method A/B groundwater cleanup level is not available, or a MCL has not been established.
(g) Groundwater samples were analyzed for diesel (including oil) and gasoline range hydrocarbons using Washington State Department of Ecology Methods TPH-Dx and TPH-G, respectively.

mg/l = milligrams per liter
µg/L = micrograms per liter

Concentrations above the laboratory reporting limit are shown in bold

Attachment B

Annual Inspection Report

OPERATION AND MAINTENANCE INSPECTION REPORT FORM
SOUTH TACOMA FIELD SITE

Inspection Date: *30 December 2014*

Personnel: *Dean Malte*

ITEM	ITEMS TO MEASURE OR NOTE	OBSERVED CONDITIONS/MEASUREMENT	MAINTENANCE OR CORRECTIVE ACTION REQUIRED
1. Amsted Property Cover System			
Dead/damaged vegetation	If present, where?	Surface and vegetation cover on slope/swale on south side appear intact. Wells are accessible and unaffected, although access to MW-1A is somewhat overgrown.	No corrective action required at this time.
Settlement/ponding	If present, where?	Minor ponding is present locally, and was frozen at time of inspection.	No corrective action required at this time
Side slopes sliding	If present, where?	None noted during inspection	No corrective action required at this time
Seismic activity damage	If present, where?	None noted during inspection	No corrective action required at this time
2. Amsted Property Drainage System			
Swales	Range of depth of sediment accumulation. Area and depth of high sediment build-up.	No evident accumulation. Vegetation cover is generally intact and thick.	No corrective action required at this time, monitor.
3. Amsted Property Site Security			
Fences	Location of deterioration or vandalism	Fences are generally intact. Partial tear of fence fabric is present west of the location of well MW-1A. Gate and concrete blocks at north end of Madison Street had been moved/damaged, but were intact at the time of inspection.	Consider repair of damaged fence fabric or installation of gate to access well; monitor Madison Street gate.
Gates	Are gates operable?	All gates appear operable, although access from the east side not attempted. NE gate appears blocked with materials by Atkinson Construction, but does not affect access for sampling.	No corrective action required at this time.
Locks	Missing or not functioning?	Chain and lock were present.	Monitor chain and lock. No other corrective action required at this time.
Signs	Signs destroyed or vandalized?	Signs were not located.	Consider replacement of signs.
4. BNR Dismantling Yard Cover System			
Settlement/ponding	If present, where?	No settlement or new rutting noted, but surface of containment area was frozen at time of inspection. Vegetation cover is generally in good condition and well established. Minor ponded water (frozen) was present locally. Wells are accessible and intact, but access routes are becoming overgrown on slopes.	No corrective action required at this time, monitor vegetation growth and rutting on roads.
Fissures	If present, where?	None noted during inspection	No corrective action required at this time
Side slopes sliding	If present, where?	None noted during inspection	No corrective action required at this time
Seismic activity damage	If present, where?	None noted during inspection	No corrective action required at this time
5. BNR Dismantling Yard Drainage System			
Swales	Range of depth of sediment accumulation. Area and depth of high sediment buildup.	No significant sediment accumulation noted at lowest elevations of swales. Minor ponding (frozen at time of inspection) is present around the perimeter of the containment area, but well monuments are not submerged.	No corrective action required at this time. Monitor.

Note: Photographs of site conditions included? No ☑ Yes ☐

OPERATION AND MAINTENANCE INSPECTION REPORT FORM
SOUTH TACOMA FIELD SITE

Inspection Date: *30 December 2014*

Personnel: *Dean Malte*

ITEM	ITEMS TO MEASURE OR NOTE	OBSERVED CONDITIONS/MEASUREMENT	MAINTENANCE OR CORRECTIVE ACTION REQUIRED
6. BNR Dismantling Yard Security			
Fences, gates, locks, and signs.	Damaged, missing, inoperable?	Fences and gates are currently secure and functional, but one of the support posts for the consolidation area gate is damaged so the gate is difficult to open (hinges are crooked). The Sound Transit fence that connects to the SE corner of the consolidation area is also intact, and bollards are present across the dirt roadway/path. The main access gate at Burlington way is secure and the fence is intact.	Periodically inspect gate, lock, fence. Consider repair of gate post and hinges.
7. Other Cover Systems - BNSF Grids 452, 453, 460, 461, 493, 494, 500, 501, 520, 532, 533, 538, 550, 554, 586, 703, 767, 785, 791, 879, 1101, 1104, 13927. Other Cover Systems - BNSF Grids 452, 453, 460, 461, 493, 494, 500, 501, 520, 532, 533, 538, 550, 554, 586, 703, 767, 785, 791, 879, 1101, 1104, 1392			
Dead/damaged vegetation	If present, where?	Grid surfaces (except as noted below) are generally in similar condition to the previous inspection, and vegetation cover is generally adequate. New debris/garbage accumulation has increased since the previous inspection, particularly on the western portion of the site (primarily on the extention of Madison Street that is located on the site), possibly due to the damaged Madison street gate. Roads and ground surfaces have been rutted and disturbed at locations throughout the site due to previous off-road vehicle and motorcycle use, but these uses appear to have been minimized by the site perimeter fence.	Monitor vegetative growth and surface conditions in all grids. Monitor condition of perimeter fence and entry gates, primarily in the vicinity of Burlington Way and Madison Street..
Settlement / Ponding	If present, where?	Minor ponding is locally present, particularly in the vicinity of grids 703, 785, 879, and east of the consolidation area, and was frozen at the time of inspection. The areas on and near grid 703, around the UST wells, and east of the consolidation area remain rutted from light rail construction activities (completed in 2010). Rutting and ponding is most evident east of the consolidation area (in the general vicinity of MW-17A).	Monitor ponding and settlement conditions.
Fissures	If present, where?	None noted during inspection	No corrective action required at this time
Side slopes sliding / Erosion	If present, where?	None noted during inspection	No corrective action required at this time
Seismic activity damage	If present, where?	None noted during inspection.	No corrective action required at this time
8. Other Areas Drainage System - Grids 899, 900, 907, 908, 909, 911			
Settlement / Ponding	If present, where?	No settlement noted. Minor ponding (frozen) noted locally. The perimeter of area is blocked with Ecology blocks and fences, but the fence fabric is damaged next to gate on Proctor Street. Wells are accessible and intact, although access to STM-3A and STM-4A is becoming overgrown. Brush has been cleared (presumably by the City of Tacoma) between the road and fence along Proctor Steet.	Monitor vegetative growth. Consider repair of fence fabric, although the area is not fully fenced.
Drainage at the southern section of the BNR Railyard	Range of depth of sediment accumulation. Area and depth of high sediment buildup.	No significant sediment accumulation noted.	Monitor vegetative growth. Repair if cap erosion is apparent.
	Ponding, blocked drainage	No settlement noted.	No corrective action required at this time
9. Groundwater Monitoring Wells			
Damage/Vandalism	Which wells?	Well STM-1A damaged as per previous inspections. Pioneer Builders Supply well NMW-8A damaged, with the stand-pipe monument tipped by 5-10 degrees and the northern protection post removed, per the previuos inspection. Other wells are intact.	Abandon and replace well NMW-8A. Abandon well STM-1A. No other corrective action required at this time. Well abandoment/replacement is anticipated to be performed in 2015 prior to the next sampling event.
10. Grid Markers			
Damage/Vandalism	Which markers?	Markers were generally difficult to locate due to matted-down frozen grass and frozen standing water. Thick vegetation is present at 554, marker not located but likely present and intact (no disturbance of ground surface in area). Markers 767, 785, and 879 (west of Madison Street) were not located. Markers located east of the fenced containment area at the northern end of the site were not readily visible (except for grid 500) because of frozen ponded water, rutted conditions, and possible damage during Sound Transit construction work. Markers 586 and 703 were not located (matted grass and frozen water present).	Survey locations of missing markers, replace/repair markers as needed. No other corrective action required at this time. Location and repair of markers, as necessary, is anticipated to be performed in 2015.
11. Other			
Site access		Access point on Burlington Way was secure. The Madison Street gate was secure at the time of inspection, but had been damaged recently. The Monroe street access gate and fence were intact, but no lock was present on the gate. The perimeter fence appears to be generally intact throughout the site, but one break was present to the east of Grid 703. .	Waste accumulation, abandoned vehicles, and off-road driving have been an ongoing issue at the site. The fence and gates installed in 2010 appear to have generally mitigated these problems, but accumulation of waste has increased in the past year, likely realted to damage to the Madison gate and possibly the missing lock at the Monroe Street gate. Periodic inspection of site access conditions is recommended.